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Original Communications.

THE NOVEL DEFENCE ATTEMPTED AT THE TRIAL OF SAMUEL M. ANDREWS FOR MURDER.

ALTHOUGH under ordinary circumstances it would seem most undesirable to prolong into a public controversy a difference of professional opinion arising upon the witness stand, yet the effect upon the course of justice and upon the efficient administration of law, of the doctrine so persistently urged in the recent articles in this Journal reviewing the late trial of Samuel M. Andrews, seems to demand at least a fair and full statement of the whole case, lest what may be an elaborate effort in advocacy of a side, might, if unanswered, be accepted as an impartial review of the whole subject.

If it is fairly established that a man, well known to be entirely sane both before and after the commission of a great crime, may during the few moments necessary to its accomplishment have been so completely deranged as to have committed it without consciousness; and if the statements of the individual alone are to be taken as sufficient proof that such a state of mind existed, a blow has been given to the whole system of checking crime by punishment, from which it cannot easily recover.

The effect of such a doctrine and such a precedent is, however, I am aware, not an argument against its possible truth. It is simply mentioned as being the controlling motive for entering upon a discussion, which would otherwise be ill-advised as well as distasteful.

The first and in its public bearing the most important question to be considered is, whether it is fairly established that there is such a form of disease as would instantaneously force a previously sane man to an act of homicide, and after its commission as suddenly leave him well and sound: a question which, if fairly settled in the affirmative, must agitate us all with fears unknown before. The second question, far less important as a matter of general interest, concerns merely the application of this remarkable theory to the case of Samuel M. Andrews.

MANIA TRANSITORIA.

In investigating the evidence by which it is sought to establish this singular form of disease, one cannot help being struck at the outset by this peculiarity. The evidence is solely that of books, and of these not the most recent, and it is not sought even to be confirmed in the practical experience of the present time. Neither the eminent and learned writer of the articles alluded to, nor any present head of any insane institution of however wide an experience, can say that he has seen or known of such a case as would be that of Andrews if insane. The cases quoted to sustain the theory are cases of the past. They have been handed down from one author to another rather as the curiosities of disease than as types to be looked for and expected. Many of them were collected and first reported by an enthusiastic Frenchman, who, with many excellencies, was always ready to make a striking impression. All are most briefly reported. Some of them were evidently cases of continuous insanity and not instantaneous. In others there seems to be no proof that any insanity existed. Of the whole class it may safely be said, as has been well remarked by Bucknill, the best English authority on criminal insanity, that the evidence upon which they rest is unsatisfactory. With the enormously increased facilities for observation afforded by the hospital system of the present day, if such a form of disease really existed, the reported cases ought to have multiplied a hundred fold. Why is it that we are told to fall back upon the observations of Esquirol and Marc and Castelnau? With lunatic hospitals scattered at short distances over our land, each having a medical staff on the alert to make discoveries in their specialty, and all consulted upon most of the peculiar cases arising within the circle of their duty, why is this form alone unreported and unheard of? Why are they unreported any-where except in defence of crime? And this leads me readily to the mention of a second peculiarity about the cases quoted to support the theory of transitory mania, which is most curious and most suggestive. In the general and well-known forms of insanity a certain percentage, and that quite a small one, are prone to homicide. Can we, knowing that only a small per cent. of the cases of mania of ordinary duration are homicidal, believe that all the cases, when it lasts but a few moments, are homicidal? Can it be believed that such a difference in the nature of the disease should be caused by the difference of duration, that all the cases of transitory insanity, if such a disease exists, should be homicidal? If there is a form of disease so short, should we not expect to find a large number manifesting insane symptoms of various kinds, a few of whom only were homicidal? And yet all the cases quoted by the learned writer were marked by a propensity to homicide. Is not this suggestive rather of a motive and an effort in all the cases to make out an excuse for crime, than of the disinterested discovery of a disease? If there is a class of cases in which a blind, unreasoning, irresistible impulse to kill is suddenly developed, should we not also expect to see a class in which other impulses to acts not criminal are developed with equal suddenness and power? Which is the more philosophical, the more reasonable—the belief that there are a few scattered cases of mania transitoria, in all of which the homicidal impulse exists, contrary to all analogy and to our experience with all the other forms of mental disease, or the belief that in the few cases recorded there is some error through deficiency of report, through deception to avoid punishment, or through mistaken sympathy? As to the possibility of so sudden a development, of so great a pathological change as would be necessary to give rise to an unconscious act of homicide in a previously sound person, we may certainly be permitted to doubt, but its improbability is certainly so great as to demand the most conclusive proof for its establishment. The well-established principle that the greater the improbability of a thing, the stronger must be the evidence in its support, should not be lost sight of in considering this case.

Sudden paroxysms of fury among the insane are not very uncommon. And this fact may without doubt be relied on to explain many of the reported cases of instantaneous insanity. The individuals in these cases were not under close observation down to the moment of the outbreak, and they were instances of the common form of continuous insanity with occasional sudden exacerbations and paroxysms of violence. The question is well worth asking with regard to many of these briefly reported cases—how were they known to be cases of insanity? Evidently there must have been something in addition to what is reported, either in the attending circumstances or in the history of the cases, to stamp them with the character which is given them; otherwise they cannot be accepted. And we cannot well avoid the suspicion that were those additional facts given, the cases would lose their elements of wonderful peculiarity, and subside into the less romantic form of disease which we are daily witnessing.

To sum up briefly this whole matter of the existence of a form of insanity lasting but a few moments, and leading during that brief time to acts of homicidal violence, the question is simply one of balance between inherent improbability and the authenticity of the quoted cases. The improbability arises from the nature of the cases themselves, from their want of harmony with the well known laws of mental disease in general, and from their failure to appear under the far more scrutinizing and extended observations of the present time. The authenticity is impaired chiefly by the imperfect character of the reports. It may well be doubted whether any case has or can be quoted to sustain the theory in the present case, which will not be liable to the latter objection. And the case under consideration certainly so far transcends all previously reported, that if admitted it would form a new starting point for the theories of mistaken philanthropy and sympathy.

While the duty of shielding under the protection of their infirmity all who through the influence of insane impulses have incurred the menaces of the law, belongs preëminently to those devoted to the study of mental diseases, they should not forget that by breaking down the barriers between disease and crime they may injure the very class they are called upon to protect.

THE CASE OF SAMUEL M. ANDREWS.

The fact most relied on to prove the existence of insanity in this case was the evidence, which has not been disputed, of hereditary insanity in the family of the accused. And the importance of this evidence was intensified and rendered more striking, at least to a common-sense view, by the fact that his mother was at the time of his birth, and for some months previously, insane. In estimating the value of evidence of hereditary insanity, it becomes necessary to ask what is inherited, what is transmitted from one generation to another. In transmission, as in other characteristics, insanity follows the same law as other diseases. With few exceptions it is liability which is transmitted, not disease. Nor is liability always transmitted. The most that can be claimed is, that to a certain proportion of the descendants a constitution similar to that of the parents is given, rendering them liable under favorable circumstances to the development of the same or similar diseases. Phthisis is a disease vastly more likely to be transmitted than insanity, and yet we find a part only of the offspring of phthisical patients liable to the disease. Rheumatism and gout are hereditary, yet we rarely find a whole family subject to them. And all of them, and insanity as well, can be avoided by many of those predisposed, by a carefully regulated course of life. From these facts follows the well understood and recognized value of evidence of hereditary disease as an aid to diagnosis in doubtful cases, as corroborative of some positive symptoms. But it also follows, that standing alone, the fact of hereditary predisposition is of positively no value whatever. If there are no actual symptoms of the disease present, hereditary tendency, no matter how strong, does not afford a sufficient foundation on which to build up an opinion that insanity or any other disease exists. We should not pronounce a person phthisical who had no cough, nor one rheumatic who had no pain or other symptoms, simply because their ancestors had these diseases. It would be equally absurd to pronounce a person insane without the usual symptoms, even if born of an insane mother. That the mother was insane during gestation and parturition, ought fairly to be allowed to be likely to increase the liability of her offspring, but still the inheritance would remain liability only. In the case of phthisis we know that it is not very unusual for a mother in an advanced stage of the disease to give birth to a healthy child, who may remain free from the disease through life.

The value, then, of the proof of insanity in the ancestry, which in this case was strong and positive, would depend entirely upon whether there were actual indications of insanity in the history of the case. If there were, it would strongly corroborate them, and a much smaller amount of evidence would be sufficient to establish the fact of the disease. If there were not, it should not be allowed to have any weight whatever.

MOTIVE.

The presence or absence of a sane and ordinary motive is in very many cases sufficient of itself to stamp the character of a deed of violence as being either on the one hand a crime, or on the other the effect of insanity. The insane homicide acts either without any discoverable motive (probably never without some motive), or else from a diseased and unnatural motive. He kills because a superior power tells him to, or because he fears to be killed himself, or to send his victim to heaven, or to avenge some imaginary wrong, or in a state of dementia and fatuity. The sane criminal kills from one of the ordinary motives of crime—either revenge, or the acquisition of some personal advantage. It is easy to apply this test to the case under consideration, and it becomes almost conclusive, although with a most remarkable forgetfulness the learned writer of the articles alluded to assumes this to have been a motiveless deed. What are the facts? A will is made by the victim of the homicide, bequeathing a considerable amount of property to the man who kills him. The latter goes with the former to get it drawn, keeps it in his possession, and after the killing takes the earliest opportunity to secure to himself the fruits of the fearful act. This points so strongly to a sane and criminal motive, that it could not be shaken, except by very strong positive symptoms of insanity, of which there are none in the case.

THE SELECTION OF TIME AND PLACE.

This is another test to be applied to the investigation of the character of a deed. The sane criminal chooses darkness and seclusion. The insane homicide, believing, under the influence of his disease, that he is doing right, is usually indifferent to time and place, and is as likely to commit the work of violence in broad daylight and in the sight of men as elsewhere. If this deed was committed in the dark, in the most retired place to which the victim could readily have been brought, it would make another most important corroboration of sanity, if such were needed. In this connection it might be well to inquire whether—allowing for the argument's sake that Andrews was subject to sudden insanity—it would be likely to occur during a violent struggle. Reasoning from analogy and from the general laws governing the disease, we cannot very well resist the conclusion that it would be less likely to be developed at such a time. Arising from an internal cause, the fixing of the attention by a fierce outward struggle would ordinarily seem likely to prevent an insane outbreak. Any strong external impression, any outward pre-occupation of the mind, is very effectual in the prevention of insane manifestations. And they are to be expected and dreaded when a lack of external impressions leaves the mind fully at the mercy of the inward disease.

Conduct after the Deed.

When the ordinary forms of mental disease are in question, one of the most important inquiries is into the conduct of the accused after the deed. The sane conceal and deny. The insane, not appreciating the wrong they have done, ordinarily do not attempt to conceal, and often avow it. This test, however, would not be conclusive, though strongly confirmatory. There are some demented persons who will conceal their evil deeds. In the form alleged in this case, the test would be less decisive from the fact that the accused was supposed to be sane immediately after the act. To a certain extent, however, attempts to conceal, denial of guilt, and eagerness to enjoy the fruits of the deed, must be considered as adding to the weight of evidence in favor of sanity. And it has been found impossible to point out any act in the conduct of the accused after the homicide which was different from what would be ordinarily expected of a criminal.

Excessive Violence upon the Body.

The insane homicide often wantonly mutilates his victim, the sane seldom. Excessive wanton mutilation, injury without object, would certainly have weight in favor of the insanity of the person committing the homicide. If, however, all the injuries, though excessive, were directed to the sure accomplishment of the fell deed, they would not indicate insanity, and would militate strongly against the probability of an unconscious state. In the case under consideration, although an unnecessary number of blows were undoubtedly struck, yet they were all directed with unerring certainty to the accomplishment of a single purpose in a single way. No injury was inflicted upon any part not vital, nor any which appeared wanton, or without a fixed object in view—the making sure of death.

The Previous Character of the Deceased.

Undoubtedly the life of the accused was subjected to a pretty close scrutiny, which not only failed to detect any outward deviation from an upright course, but which developed rather an unusually good reputation in every respect. This, of course, diminishes the likelihood of crime, and would increase the probability of insanity, if any positive symptoms had been manifested. But like inherited tendency it of course cannot be relied upon as a foundation upon which to build up an opinion that insanity really exists. The unpleasant truth is too often forced upon us, that we cannot always rely upon previous uprightness. Men apparently of the best lives will now and then be found to yield to the pressure of overwhelming temptation.

The Weapon Used

was a most unusual one, and its nature doubtless had a great influence, and justly so, in proving to the jury a want of any lengthy premeditation. But it can have little or no weight in the consideration of the medical question involved in the case.

Conclusion.

Starting, then, with the entire absence of any positive symptoms of insanity in the conduct of the accused, although he was under the observation of competent judges down to a very brief time before the deed, and almost immediately afterwards, and applying to his case the usual tests of motive, selection of time and place, subsequent conduct, and mode of commission, there would seem to be no good reason for the attempt to apply to his case a theory of disease of such doubtful authenticity as that of mania transitoria. ⁂

PERSONAL EXPERIENCE WITH THE HOT-BATH IN STRANGULATED HERNIA.

By Benj. D. Gifford, A.M., M.D., Gloucester.

I hope it does not often fall to the lot of a medical man to experience, in his own person, the agonies of that most distressing surgical affection, strangulated hernia. We can gain some notion of the intensity of physical suffering by observation; but it requires the terrible ordeal of a personal experience to realize fully what we may be familiar with as a phenomenon in others. In my own case I had, some years before, provoked a hernia on the left side by horseback riding; but by wearing a truss had effected a radical cure—so much so that no amount of violent exertion had re-produced it. Latterly I had worn no truss at all, but at the time this accident happened to me (January, 1868), the descent of the intestine took place on the right side, and was the result of no unusually violent exertion. During the morning of the day upon which it occurred, I had worked from 11 till 12 o'clock in dressing a fracture; my position in standing being such as to relax the abdominal muscles. I experienced a peculiar feeling of weakness in the inguinal region at the time. I reached my office about noon, and had been there but a few minutes when I was summoned in great haste to an infant who had been poisoned with morphine. In an ordinary case I might have taken some precaution before exerting myself, but I forgot my threatened hernia and hastened to my patient. I worked vigorously over the child, keeping up artificial respiration, &c., my position being the same as with the patient I worked over an hour before—a stooping posture. I soon felt the intestine descend, accompanied with a good deal of pain; yet, considering my patient in infinitely greater danger than I was myself, I continued my efforts until the agony was insupportable. I went home and made every possible effort to reduce the tumor; it was about the size of a goose-egg, and was so tense and hard and fast becoming so tender that I found myself unable to effect anything but torture. I then sent for my friend, Dr. Lilly, who etherized me and attempted reduction, but failed. He desiring assistance, Dr. Griffin was called two hours later; in the mean time severe colicky pains came on, and the tumor was exquisitely tender. This time I was chloroformed and reduction essayed, but with no better success than before. I made up my mind that nothing but the knife would release me, and listened passively to the arrangements for the hot bath. The symptoms not being severe, it was determined, nothing to the contrary, to wait till morning. During the night, copious bilious vomiting took place, and my peritoneum became quite tender; but I got through it with the aid of a couple of grains of morphine—having no other effect, however, than to lull the pain a little.

At about ten o'clock the next morning, having previously prepared for the operation in case of failure, I was put into a full bath of 90° Fah., and hot water introduced till the temperature reached 110°, at which point it was kept till I almost collapsed. While in this condition taxis was employed and the tumor partially reduced; but as the peculiar gurgling sound was not heard and so much œdema left, it was not till the afternoon that the loop was decided to have entered the abdomen and the operation given up.

My case illustrates the utility of waiting and resorting to every known expedient before operating, when the symptoms are not extremely urgent. Erichsen teaches, to chloroform the patient and try taxis not exceeding half an hour; if not successful, then to operate at once. Of course in severe cases, in which the strangulation has existed for some time, such a proceeding would be eminently proper; but in cases like my own, with no stercoraceous vomiting and comparatively mild symptoms, I should not think it advisable to operate soon after the formation of the hernia, even though reduction could not be effected with the aid of chloroform or ether. This case yielded to the hot bath when those anæsthetics had failed, during the manipulations of the same surgeon.

TREATMENT OF THREATENED ABORTION.

By B. F. Tasker, M.D., Kendall's Mills, Me.

Patient, five months advanced, slipped and fell. Commenced flowing the next day. I was called the following day. Found the patient in considerable pain, from which she had suffered since her flowing commenced. She was nervous and excitable, not having rested for thirty-six hours. I had her placed in a cool room upon a mattress, and administered a grain and a half of opium and repeated the dose in two hours; after that, every four hours till the next day. Cool drinks and cool liquid nourishment were taken as required. On the following day I ordered one grain of opium every three hours, and followed up three days till the flowing stopped. I then put her upon iron. She made a good recovery, passed to the allotted time, and was delivered of a full-grown child. I should have said that she had aborted once or twice before.

I have since treated a number of cases in the same way with good success.

November 29, 1869.

The Parisian Medico-Legal Society has appointed certain of its members to investigate the following questions: Poisoning by croton oil; the application of photography, drawing, and various processes of mensuration, to legal medicine; the resistance of newly born children to asphyxia, and tattooing; experimentally, poisoning by phosphorus.—*Dub. Med. Press & Circular.*

CLINICAL EXPERIENCE WITH CHLORAL.

Translated by Robert Amory, M.D.

Having come across the review by Dr. Bricheteau of the experiments on chloral made by Messrs. Liebreich, Dumas, Richardson, Spencer Wells, Dumarquay and Follet, Dieulafoy and Krishaber, Labbé, Guyon, Giraldés and Worms, Bonchut, and Personne, as well as some results of clinical experience by the reviewer, I translate his conclusions for the benefit of your readers, who may not have seen his article in the *Bull. Gen. de Thér.*, Nov. 30th.

1st. Hydrated chloral, or chloral hydrate, is a powerful sedative to the nervous system, both motory and sensory.

2d. If the hydrate of chloral is not crystalline and very pure, so that in the evolution of chloroform by the addition of potass. there is no brownish color produced in the residuum, it is either without action or may be very dangerous.

3d. A larger dose than 75–90 grains (5–6 grammes) should not be given at any one time to an adult, and to a child the commencing dose should be 15–30 grains.

4th. The preparations of chloral ought not to be made too long before the administration, for they lose their character and become inefficacious.

5th. The administration may be made by the mouth. Baths produce the same effect as when the stomach is used, but the latter is the better method.

6th. Its use should not be employed in patients who have organic disease of the heart or brain.

7th. It is on account of the production of chloroform in the blood, from its alkaline reaction, that the ingested chloral produces sleep and anæsthesia.

8th. It is dangerous in man to employ its hypodermic injection.

9th. The arterial tension is augmented by the influence of chloral, at the same time that a diminution in the frequency of the pulse is produced; this tension diminishes on awaking, as the sphygmographic trace indicates.

10th. The urine during the sleep produced by chloral is neutral; and, boiled with Fehling's liquid, it does not reduce at first the copper salts; but the next day it becomes, when the chloral has passed through the kidneys, more dense, and will cause the reduction of the copper salts; this may cause a belief in the presence of sugar in the urine, which does not in point of fact exist.

11th. Hydrate of chloral rarely causes vomiting, and never purges.

12th. The temperature is slightly lowered, by doses which are not toxical, which points to its being an algid medicament.

13th. By the hydrate of chloral the cutaneous perspiration is diminished, and the skin becomes dryer than in the normal state.

14th. This drug can be precisely dosed for the efficacious production of anæsthesia; whilst in the inhalations of chloroform for the same purpose, the vapor cannot so be dosed. The uncertain use of chloroform vapor makes its use very dangerous.

15th. The action of hydrate of chloral is exactly that of chloroform, but its production is slower, and its duration longer if the chloral is used.

16th. In some patients submitted to the action of chloral there is a muscular and moral excitement similar to alcohol drunkenness; but this intoxication is not disgusting nor disagreeable.

17th. In almost all there is a sleep, remarkable from a very pronounced anæsthesia, and rarely accompanied with hyperæsthesia.

18th. The anæsthesia is proportioned to the dose employed, and in the dose of 30 to 75 grains, according to the age, it is complete, and the cautery of Vienna paste may be used, or even teeth extracted, without causing pain.

19th. Compared with opium, which often causes vomiting, which destroys the appetite, which stimulates, heats, constipates, excites the cutaneous transpiration, produces slowly a heavy sleep, and leaves after awaking a *malaise* from prolonged sleep; hydrate of chloral does not produce vomiting, does not constipate, nor destroy the appetite; it dries and may even cool the skin; it quickly causes a light sleep which lasts some time; finally, on awaking, it leaves no heaviness of spirits nor feelings of somnolence, and can be taken several days in succession.

20th. In a large dose, this drug produces algidity, whilst opium produces heat and diaphoresis.

21st. A dose of 45 to 75 grains can be repeated two or three times a day without inconvenience, and there results two or three times several hours of sleep, separated by a short interval of wakefulness.

22d. As a therapeutic agent, the chloral is sedative to violent pains in gout, to atrocious sufferings from nephritic colic or from dental caries, or from burns. In other words, it is the prime anæsthetic administered by the stomach.

23d. In the cases where a resort to chloroform is made, the chloral can be used to appease the pangs of natural parturition, to facilitate obstetrical operations and to combat puerperal eclampsia.

24th. Finally, it is the most prompt and efficacious remedy to employ in intense chorea, when we wish to cause a rapid cessation to an agitation which of itself threatens the life of the patient.

Why will not some of your readers who have a large obstetrical practice, test its benefit in parturition?

Reports of Medical Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

CHARLES D. HOMANS, M.D., SECRETARY.

Nov. 8th.—*Paracentesis Thoracis; thirteen pints of Serum drawn off.*—Dr. Hodges reported the case.

The patient was a man of average size, aged 28 years. The effusion commenced during an attack of pleuritis in February, and in June had nearly filled the left thoracic cavity. From August 15th to October 30th the symptoms were, however, so slight that he attended to light work and complained of shortness of breath only on going up stairs; Oct. 31st the whole left side of the chest was full, the intercostal spaces bulging out; paracentesis thoracis was performed, and thirteen pints, by measurement, of a greenish, slightly purulent fluid, were drawn off. During the operation there was a severe fit of coughing, and afterward the respiratory murmur could be heard in the upper part of the chest, though a careful examination could not be made on account of the weakness of the patient.

Nov. 1st.—The respiratory murmur was heard as low as the inferior angle of the scapula, and the heart, which had been dislocated to the right of the sternum, had returned to its normal position.

Nov. 7th.—There was still further improvement, and the patient's general health was excellent.

Dr. Bowditch said the amount drawn off was enormous, three quarts being generally the limit.

Dr. H. K. Oliver had drawn away within a few months nine pints of serum from a boy of 14 years, and ten and a half pints of sero-purulent fluid from a man.

Dr. Jackson said the late Dr. Stedman once found two gallons of thick pus in the thorax after death; one gallon was the largest amount ever seen by himself.

Dr. Borland asked whether in cases attended with great effusion it were not better to tap the chest early rather than wait for absorption.

Dr. Bowditch said there were generally no unpleasant symptoms during the operation for thoracentesis with exploring trocar and pump. There is sometimes a stricture of the chest, and when that occurred he had usually withdrawn the trocar. In the case reported the patient had waited almost too long; Dr. Bowditch would operate after six weeks of illness. In over two hundred and fifty cases in which he had tapped the chest he had had but one in which the tapping produced apparently an inflammation of the skin, and subsequently unpleasant results. This case occurred three months ago in a child nearly dying from dyspnœa and exhaustion, having had a *perinephritic abscess which had opened into the chest.* A few ounces of fœtid pus were drawn from the pleura with relief, but an erysipelatous inflammation of the skin of the thorax set in, and death ensued; at the autopsy the remains of the abscess were found in the abdomen, extending into the right lung.

To Dr. Oliver, Dr. Bowditch said he had seen recovery ensue in one case only where the effusion was bloody, but he had seen few such cases.

Dr. Williams said Trousseau was in favor of tapping early in cases of pleurisy, as sometimes the effusion increases rapidly and death ensues suddenly.

Dr. Wheeler had lately visited a patient with effusion into the pleural cavity, who seemed pretty comfortable, and asked to have tapping of the chest which had been proposed put off till the next day, and this was agreed to; the next day the sick man again proposed a postponement, and seemed quite easy, but died suddenly a few minutes afterwards. At the autopsy the chest was full of fluid, the lung compressed against the spine, and not larger than the fist.

Dr. Bowditch thought that if a puncture had been made, the fluid let out and artificial respiration employed, possibly recovery might have ensued. Some years ago he saw a child with its chest apparently half full of fluid, and suffering from attacks of dyspnœa; it was thought best to wait before tapping, and in less than twenty-four hours the child died in one of these attacks. He thought it always advisable to ask of attendants whether the patient has any sudden attacks of great dyspnœa, and, if so, it is well to operate immediately.

Dr. Ware had twice seen death occur within a few hours from sudden effusion into the pleural cavities after scarlet fever. Where the effusion was so rapid, and was still going on, he doubted whether any operation could save the child.

Dr. Bowditch thought the tapping might be repeated day after day if necessary; to Dr. Hodges he said these attacks of dyspnœa seemed to depend on dislocation of the heart, and may be caused by any little excitement.

Dr. Jackson thought it probably as with diseased hearts, death taking place suddenly and unexpectedly after excitement.

Dr. Bowditch said that pretty hard work may be done by persons having a rather large quantity of fluid in the cavity of the pleura; he had once seen a case which was tapped, but dulness existed for years afterwards, and after death an encysted purulent deposit was found in the chest.

Nov. 8th.—*Fibro-cystic Neuroma.*—Case reported by Dr. Cheever.

The patient, a single woman of 35 years, applied for the removal of an encysted tumor of the neck of more than five years' duration. She had had pain and numbness of arms (she says of both arms) for five years. Had been treated with strychnia. Tumor now as large as an egg, and filling left subclavian triangle. On cutting down on it, it was found to be crossed by numerous nerves, supposed to be acromial and clavicular branches of the superficial cervical plexus. These were pushed aside, and beneath the cyst a solid mass was dissected out, which lay deep, and environed by nerves. Some branches were blended with it, and some were divided in its removal.

The patient is recovering, but has a partial paralysis of the left arm—chiefly the deltoid, triceps and radial extensors—indicating injury of the musculo-spiral and circumflex nerves.

On examination, the cyst, which was twice as large as the solid portion, contained a thick, albuminous fluid, but no pus. On section of the solid portion, white lines, soft and pasty, were seen running through it, and suggested degenerated nerves. The exterior was surrounded by eight nervous filaments.

Dr. Webber's examination with the microscope found degenerated nerve-fibres in the tumor, and a great many oil-globules. The solid mass was made up of cells of fibrous tissue, with nuclei; and a few with large nuclei. He thinks it might be classed as a fibrous sarcoma. (Virchow.)

This tumor probably began as a neuroma in the neurilemma of the posterior cord of the brachial plexus (which makes up the musculo-spiral and circumflex nerves), enveloped some nervous bundles and unstranded the rest. Paget's nomenclature defines it best as a fibro-cystic neuroma, and he says the fibro-cystic tumor is frequently seated on nerves.

Nov. 22d.—*Villous Cancer of Breast.*—Dr. J. C. Warren reported the case.

A female patient, under the care of Dr. Green, noticed a small swelling in the right breast some time last winter, which appeared shortly after a fall by which she received a blow on that spot. The tumor continued to grow until it reached the size of a small hen's egg, when it was removed by Dr. Cabot, in May last. It was soft, almost fluctuating, and appeared to the feel to lie by the side of the mammary gland. This organ was found to be implicated, however, and was removed, together with an elliptical portion of skin.* The wound healed readily, but during the summer months a small red lump, the size of a pea, having the appearance of a blood-blister, appeared at the outer extremity of the cicatrix. This steadily enlarged until it reached the size of a grape, when the thin covering was punctured with a lancet, and a quantity of bloody fluid escaped, together with clumps of tissue resembling that of the original tumor. A second operation was performed in October.† The specimen sent to me by Dr. Ellis presented the following appearances:—The new growth lay directly beneath an elliptical-shaped piece of skin, about two and a half inches in length, in the centre of which is a round sharply cut hole connecting with a short sinus about half an inch in depth. Beneath the skin lay an encephaloid mass, having the color and consistency of somewhat softened brain-substance. A small piece snipped off with curved scissors, was found, under the microscope, to consist of cells closely packed together, united at some points by a delicate granular intercellular substance, with here and there a very fine fibril, though for the most part they seemed in direct apposition with one another. Most of the cells were large and spindle-shaped; there were a few having several prolongations and a smaller number of round cells. They contained sometimes one and sometimes two large well-marked nuclei. The cells were arranged parallel to one another, and mostly in fasciculi, very frequently also in villous prolongations.

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* The tumor was examined microscopically, and pronounced fibro-plastic.

† The growth appeared to be contained in a cyst, which, when cut into, gave vent to a quantity of bloody fluid.

The tumor was allowed to harden during twenty-four hours in a 1-100 solution chrom. acid, when a few incisions were made with the scalpel. This showed the central portions which surrounded the sinus in a semifluid state, resembling rather thin pus. This fluid was filled with cells similar to those described above. On hardening for a day or two longer the capsule became more distinguishable from the contained mass, which was very friable, and appeared to break up into layers concentric with the capsule. At the centre the arrangement was irregular. Owing to its friable nature it was only possible to obtain a small and rather thick section, which, seen with a lower power, showed an arrangement like that of villi closely packed together, and united to the capsule by narrow pedicles. Small portions picked out with needles, colored in carmine and examined in glycerine and acetic acid, showed nothing that had not not been seen before. Nowhere could any alveolar structure be found, such as is usually seen in carcinoma. No central stroma could be made out in the villi. The tumor was laid aside in alcohol, but not being fully satisfied with the above examination, I determined to make one more attempt to cut a thin section, and this time was successful in obtaining several which embraced both the skin and capsule and a portion of the growth united to the latter by pedicles.

The capsule was continuous with the lower layer of the cutis, and consisted of ordinary connective tissue infiltrated with small round cells, such as are seen in inflamed tissues. From the inside of the cyst wall sprung the pedicle of the new growth, giving off delicate branches, from which were suspended on either side rows of cells resembling closely in their arrangement and shape columnar epithelium. At some points the branches nearly met, so as to form alveoli containing masses of cells. An arrangement similar to the above was found to obtain in all the cuts made.

This growth, in many points, bears a strong resemblance to epithelial cancer of the columnar variety; yet the prominence of the villi both in the examination of fresh portions and in the sections afterwards made, was sufficiently marked to lead to the conclusion that the specimen was one of villous cancer, notwithstanding the fact that its occurrence in this organ is extremely rare. Indeed, no mention of such a case is made in the works of many of the most prominent German pathologists.

It is interesting to compare the anatomy of this form of cancer with ordinary alveolar carcinoma, whose microscopic structure resembles it in many ways and whose gross appearance may be very different. The mode of development of the two is considered by Rokitánsky to be the same. The villi do not appear in the earliest stages of the development of this form of cancer, but the dendritic vegetations, as Rokitansky calls them, take their rise at a later period from the trabeculæ of the stroma. It is clearly nothing more, he remarks, than medullary carcinoma, with predominant stroma formation.

Note.—Since the above case was reported, a new growth has taken place in the substance of the pectoral muscle, beneath the old cicatrix. This grew rapidly, and when removed by Dr. Cabot was about the size of a hen's egg. It was also inclosed in a capsule, and under the microscope showed the same villous arrangement.

Nov. 22d.—*Villous Cancer of the Eye.*—Dr. H. Derby reported the case.

C. H., aged 36, came to the Infirmary in Charles Street Sept. 6th, 1869, complaining of failing vision of the left eye, which he had noticed for the preceding three weeks. Owing to the fact of his being a Swede, and almost entirely unacquainted with English, no estimate of his remaining vision could be made, and no accurate history of the case obtained.

The eye was externally normal. Oblique illumination showed a rounded tumor projecting into the vitreous from just behind the upper-inner edge of the lens, coming apparently from the ciliary region. This tumor was evidently beneath the retina, the vessels of which could be seen to pass over its surface.

In view of the rapid development of the growth, removal of the eye was strongly urged, but declined by the patient. The case was exhibited to the Medical Improvement Society during the first half of September.

Nov. 15th he again presented himself. The whole globe was now much congested, the pupil closed and the iris pushed forward. Severe pain had been suffered for a fortnight past. Enucleation was again proposed and performed Nov. 16th.

Dr. B. Joy Jeffries, microscopist of the

Charitable Eye and Ear Infirmary, examined the tumor and made the following report:—

"With regard to the enucleated eye submitted to me for inspection, I would report the following:—

"The globe seemed of natural size, elasticity and firmness, the cornea opaque. Optic nerve cut close to the globe looked normal. The globe was divided by section into an anterior and posterior half, in doing which a growth or tumor was divided. The retina remained attached at the papilla and folded together, stretched forward round in front of the anterior mass of the tumor, up to where the displaced crystalline lens laid against the sclerotic. The choroid was in place, except under the tumor its pigment was scattered and broken down. The sclerotic was considerably thickened over the entire surface occupied by the tumor. The anterior half of the eye was not more dissected than to find that the lens was displaced and that the floating mass of the folded retina was distinct from and not attached to the tumor. The folded retina had rather a yellowish color; where it laid against the tumor *behind*, there seemed to have been inflammatory exudation, none in front. Vitreous had disappeared.

"The tumor may roughly be said to be a black flocculent mass arising apparently from the choroid or the sclerotic beneath; this latter was inflamed when thickened. The flocculent mass of the tumor is as black as melanosis, darker than the choroid left. Where the tumor sprung from the choroid it could not be followed.

"Under the microscope the tumor when teased out consisted of some stroma and large spindle-shaped cells, with nucleus and nucleolus, some broken, some with prolonged ends, some quite filled with pigment. The microscopic field was quite filled with pigment cells and granules. The cells of new growth would be found in long lines or clusters easily separating.

"By cutting off under water some of the flocculent ends, as they floated up from the surface of the tumor, and getting them on to the slide, they were seen to be villi studded with cells which readily separated, the covering glass breaking them off. In several specimens this attachment of the cells was quite perfectly seen. I regard the growth, therefore, as "villous cancer." In a hasty research I do not find that this form of cancer has been seen or supposed possible in the eye, it being a form connected with mucous membranes.

"Drs. Calvin Ellis and J. Collins Warren concur in my opinion, they having studied the specimen with me.

"The posterior half of the globe is now hardening in chromic acid; the anterior half is in a weak alcoholic solution. Further examination of these will no doubt confirm my diagnosis."

Bibliographical Notices.

Cataract and its Treatment, Medical and Surgical. By Jabez Hogg, F.L.S., Senior Assistant Surgeon to the Royal Westminster Ophthalmic Hospital; Ophthalmic Surgeon to the Royal Masonic Schools; Consulting Ophthalmic Surgeon to the Hospital for Diseases of Women and Children, Westminster; Medical Officer of the Progress Life Insurance Office; Fellow and late Vice President of the Medical Society of London; Fellow and Hon. Sec. of the Royal Microscopical Society, &c. Author of A Manual of Ophthalmoscopic Surgery; The Microscope, its History, &c. One Shilling. Pp. 35.

On looking over the numerous monographs on cataract, published within the last ten years, it will be found that while many authors have endeavored to throw fresh light on the pathology and progress of the disease, the majority have contented themselves with either introducing some new plan of operation, or detailing their respective experience while following out the methods already in vogue. Mooren, Jacobson, Bowman, Critchett and von Graefe have successively advocated important modifications or originated new operations; while, among others, Steffan, Dantone, Rothmund and Knapp have collected operative statistics having a most important bearing on the methods now employed.

At a time like the present, when the revolutionary epoch of ophthalmic surgery has been succeeded by a new, but not yet fully established regime, contributions to the literature of so important a subject as the cause and cure of cataract will be hailed with interest and examined with care. Few so fertile fields of inquiry remain. Any real discovery, throwing light on the prevention or medical treatment of this disease, would be greeted with the utmost satisfaction.

Mr. Jabez Hogg is the author of a treatise on the microscope, with which we do not happen to be acquainted, and a manual on the ophthalmoscope, with which we do. The merits of the latter extraordinary work are so well understood on both sides of the Atlantic that any allusion to it, in this connection, would be superfluous.

In the present pamphlet the writer states his object to be the throwing out of observations which "may subserve the purpose of a more accurate diagnosis, and promote a more rational treatment of diseases of the refracting media of the eye." The catoptric test has, it seems, been superseded by the ophthalmoscope. As important as this discovery is another, which furnishes us with a "synthesis of cataract," and which seems to be that "certain conditions observed in conjunction with opacity of the lens, depend partly on changes, the result of simple physical forces." Saccharine or saline cataract results from saturating the blood with certain substances, and disappears as the producing agent is eliminated. Why, then, may not cataract be cured without operation, by discovering and removing or neutralizing its cause? Mr. Hogg is persuaded "that, by supplying to the organism its lost material, osmotic nutritive action will be restored, and the further progress of disease be arrested. It only remains for the medical practitioner to draw reliable physiological deductions from the important facts revealed"—a task which Mr. H. gracefully waives in his favor.

We are favored with a history of the manner in which Sir David Brewster cured himself of an attack of cataract, forty years ago. *Ne sutor ultra crepidam* was never more strikingly illustrated than by the story of this distinguished savant. It seems he diagnosticated a fissure of his own crystalline lens, and attributed this to a process of desiccation, owing to a deficiency of the liquor Morgagni. After trying various internal remedies, he settled down on the pulvis salinus compositus, and in eight months had the gratification of having the laminæ of the crystalline body "suddenly brought into optical contact."

Pondering subsequently on the rationale of his cure, he was led to evolve two rules for the treatment of incipient cataract—the one being the evacuation of the aqueous humor, the other the injection of distilled water into the anterior chamber, after evacuation.

Mr. Hogg encouragingly adds that the latter expedient has been resorted to "without having been productive of injury of any kind." The non-existence of such a fluid as the liquor Morgagni, if known to him, in no wise appears to shake his faith in the conclusions of Sir David Brewster. He expresses increased confidence in the belief that we ought to obtain perfect success in the medical treatment of cases of cataract. He has even notes of "a great many cases medically treated with considerable success." He has delayed the progress of cataract, and prevented cases passing from the incipient stage. Such statements may carry comfort to the mind of a non-professional reader, but, in the absence of any accurate measurements of vision, are of course destitute of scientific value.

The well-known experiments of Sperino on the evacuation of the aqueous humor, for the cure of cataract, are related. It is, however, admitted that in some obdurate cases, the removal of the cataract is necessary. With a passing fling at certain modern modifications of the operation which he is disposed to think "frequently end in mutilations of eyes, rather than restoration of sight," the author states the method followed by his colleagues and himself at the Royal Westminster Hospital. It is the flap operation, as performed by Guthrie. "My colleagues and myself still give it the preference it so well merits, and the unvarying results may well challenge comparison with those obtained by any other mode of operating, in any eye institution in the world."

The last six pages give Guthrie's account of the preparations for the operation of flap extraction, in his own words. The operation itself is not described, nor is any other method alluded to. The employment of anæsthetics receives no mention.

Audacity could go no farther. That a claim should be gravely put forward that a hospital, with which the author is connected, furnishes statistics of the operation for cataract that will compare favorably with those of any other institution; that this claim should be unsupported by one tittle of evidence in the shape of tabular statements or collected statistics; and that the operation employed should be one which ignores each and every improvement of modern science, either in the way of alleviating present pain or ensuring ultimate recovery; almost transcends belief.

It is to be hoped that the good sense of Sir David Brewster has, ere this, taught him to disavow the imperfect theorization and hasty conclusions made, on the subject of cataract, nearly forty years ago. His distinguished services in other portions of the field of science may well excuse a few errors on a point with which he could not be expected to be fully familiar. For Mr. Hogg, however, we can find no such extenuation. It is impossible to speak, save in terms of condemnation, of a work which professes to convey information on a most important subject, and which, in place of imparting knowledge, contains only statements unsupported by evidence, and claims as arrogant as unfounded; the whole glossed over with a thin layer of experimental physiology, derived from other sources. And our only excuse for a notice as extended as the present, is our desire to protect the unwary reader, be he medical or lay.

Opposite the title page are two colored lithographs, claiming to represent the eye and its interior in health and disease. That this claim belongs to the class just alluded to, will be evident on inspection. H. D.

Medical and Surgical Journal.

BOSTON: THURSDAY, DECEMBER 30, 1869.

SYNCOPE.

Three forms of Syncope Demonstrated:—One by Arrest of the Heart's Action; the Second by Arrest of the Respiration without Asphyxia; the Third by Arrest of some of the Interchanges between the Blood and the Tissues.

Dr. BROWN-SEQUARD in his *Archives de Physiologie* has a short paper on this subject, which, with the exception of the opening sentences, we here translate.

Of the three kinds of syncope on which I propose to speak, one is perfectly well known—the arrest of the heart's action. I will merely say that this arrest may take place not only in consequence of irritation of the par vagum or of the rachidian bulb, but also—1st, through the influence of irritation of the sensory nerves of the limbs and trunk, as was shown by Majendie; 2d, through irritation of different parts of the encephalon in the neighborhood of the bulb and of the cervical spinal marrow, as I have often demonstrated during more than twelve years (vide *Journal de Physiologie*, April, 1858); 3d, from irritation of the great sympathetic in its abdominal portion, a fact which I discovered by experiment on mammalia a long time before Goltz met with it in experimenting on frogs (vide *Archives de Médecine*, Nov. 1856, p. 583); 4th, as the effect of a special influence appearing to proceed spontaneously from the cerebro-spinal system and accompanying each inspiratory effort, and manifesting itself with energy, especially under certain circumstances, such as the latter moments of certain forms of agony [distress?] for example (vide my paper on the association of the inspiratory efforts with the arrest of the heart's action, in the *Journal de Physiologie*, &c., 1858, p. 512). When it occurs alone [uncomplicated]—which is very rare—this form of syncope does not produce sudden death (I mean death *absolutely* sudden), since respiratory movements, agitation, and finally convulsions of agony then take place.

The second form of syncope is less known, although it has been the subject of much writing and discussion. It consists in the arrest of respiratory movements without asphyxia. In 1858 I had already pointed it out (vide *Journal de Physiologie*, &c., April, 1858, p. 223 et seq.; and 1860, p. 151 et seq.), as showing itself upon simple puncture of some parts of the base of the encephalon. When respiratory movements are suddenly arrested by irritation of the rachidian bulb, or the parts of the nervous centres which are near it, the heart most frequently continues to beat with more or less force and rapidity. This arrest of the respiration is not due to a reflex spasm of the diaphragm or of the intercostal muscles, but to cessation of action on the part of these muscles, caused no doubt by cessation of action on the part of the respiratory nervous centres. (Vide for the mechanism of this arrest, *Archives de Physiol.*, 1868, pp. 159 and 317.) In the immense majority of cases the arrest of the respiration, which is provoked by irritation of the par vagum, by irritation of the abdominal ganglions of the great sympathetic, or by irritation of certain parts of the nervous centres—that arrest coëxists with the third cause of syncope, which I shall presently mention; and then there is for that reason no asphyxia.*

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* The phenomena which characterize asphyxia (agitation, convulsions and elevation of temperature) are caused by a rapid augmentation of the quantity of car-

When, in December, 1868, and January, 1869, I repeated my experiments relative to the influence upon the respiratory movements of section of the lateral columns of the spinal cord, I several times saw the respiration suddenly and completely suspended on both sides at the moment of section either of a single lateral column (a cord of one side) or of a lateral half of the spinal marrow in the upper portion of the cervical region. Figures 1 and 7, plate v. [these are in a previous number of the *Archives*] show the lesions produced in two of those experiments in which death took place suddenly, without the slightest trace of agony being evinced by the muscles of animal life. The three forms of syncope existed in these two cases, incompletely as to the heart, which continued to beat feebly for two or three minutes; but completely as to the arrest of the respiration and as to the suspension of certain phenomena of interchange between the tissues and the blood. I have ascertained, as I have already stated (*Archives de Physiol.*, No. of March, 1869, note 3, p. 299), that it is especially the irritation of the lateral column—along by the origins of the spinal nerve—which is capable of producing the arrest of the respiration. This influence exists as concerns the latter roots of this nerve, but it is much more powerful at the level of its first roots (those of the bulb).

The third form of syncope, which has not been hitherto investigated, is too important and too complex for me to attempt to fully describe in this short paper. I shall ere long give, in a special monograph on the subject, the details of the facts which I have observed in this connection. But, in making investigations upon the causes of the absence of agony in cases of sudden death from irritation of the par vagum, of the abdominal portion of the great sympathetic, of the spinal marrow, or of the encephalon, I long since ascertained (vide *Journal de Physiologie*, &c., 1860, vol. iii. p. 154) that the venous blood is of a color much less deep than it is in the normal condition, and is sometimes as red even as the arterial blood. This peculiarity, and another quite as interesting—to wit, the rapid lowering of the temperature—are the two principal facts which demonstrate that certain interchanges between the tissues and the blood have not taken place, or at least are notably diminished. It is very remarkable that in animals presenting these peculiarities, by consequence of either one of the three causes, which, according to my experiments, may produce them—to wit: energetic irritation of the par vagum, of the cervical portion of the spinal marrow, of the isthmus of the encephalon,[*] or finally of the abdominal portion of the great sympathetic[†]—the vital properties of the contractile and nervous tissues last longer than after other kinds of death, and especially after death from uncomplicated asphyxia or from rapid hæmorrhage. Furthermore the cadaveric rigidity appeared later and lasted longer in animals dying by these different forms of syncope than in those where death has been preceded by struggles of distress.

In man, sudden deaths, caused by wounds, emotions, &c., sometimes present also the characteristics of the third form of syncope we have just mentioned. What has been called "shock, concussion, collapse, *traumatisme*," following upon wounds or operations, is in reality only a lesser degree of the three forms of syncope, which it is the object of this brief paper to notice, and to distinguish from each other.

WE present our acknowledgments for a copy of the "Annual Report of the Board of Regents of the Smithsonian Institution," &c., for 1868. Washington: Government Printing Office. 1869.

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bonic acid in the blood. These phenomena in the third of the forms of syncope which we set up, are wanting, for the very simple reason that their cause does not exist.

[*] For the benefit of those whose only text-book of anatomy may be Wilson's, we take from Cruveilhier the following definition:—The term *isthmus of the encephalon* comprehends that part of the encephalic mass which consists of "the pons Varolii and the middle peduncles of the cerebellum, the peduncles of the cerebrum, the tubercula quadrigemina, the superior peduncles of the cerebellum, and the valve of Vieussens." It is the common point of union between the three great divisions of the cerebro-spinal axis, viz. the medulla spinalis, the cerebrum, and the cerebellum.—ED.

[†] In one case, in a rabbit whose thorax had just been opened, I have seen the three forms of syncope produced by galvanization of the diaphragmatic nerves. The arrest of the heart's action was incomplete; but the two other kinds of syncope were as complete as after irritation of the rachidian bulb or of the par vagum.

Mr. Editor,—In your extract from the Annual Report of the Massachusetts Charitable Eye and Ear Infirmary, in the last number of the Journal, you give us credit for the sixty-eight operations for cataract, done within the year, and divide our results into successful and unsuccessful only.

I must beg you therefore to notice the fact that to these results we have appended a table, giving an accurate statement of the amount of vision obtained in forty-seven of our successful cases, being all in which we could procure an examination. It is from such statements alone that the relative value of the different methods of operation can be properly estimated, anything more general being valueless for scientific purposes.

Very truly yours, Hasket Derby.
One of the Surgeons Mass. Charitable
Eye and Ear Infirmary.

Boston, Dec. 27, 1869.

Poisoning by the Bite of a Rattlesnake.—From a letter from Dr. F. Williamson, of Waynesville, Ohio, we quote the following:

A short time since I was summoned to see a little girl aged 12, who had been bitten by a rattlesnake forty-eight hours previous. She was bitten on the right foot, and the swelling had extended to the hip. Two physicians had been attending her, and used the ordinary remedies. I employed carbonate of ammonia with whiskey, and applied to the limb, from foot to hip, a cold alkaline solution. She was suffering from intense pain, and had slept but little from the time she was bitten. Her pulse was 120, quite feeble, and symptoms of impending dissolution were present. Soon after the external application was made she became quiet and slept soundly. The swelling was reduced in forty-eight hours, and the pulse became less frequent. She was from this time relieved from pain, and recovered.

We make the following extracts from one of a series of admirable letters in the *Boston Daily Advertiser*, on the Insane Asylum project. We invite special attention to the paragraph beginning with the words "The building should be low studded." A little reflection will show the soundness of the position thus taken; which, yet, is quite opposed to the common impression.

"The question for the tax-payers of Boston to consider is, Shall there be built, at vast expense, *a palace for insane foreign paupers?*

"My first reason for saying 'No' has already been given. It is not absolutely necessary. Nearly all the present inmates are now, in all respects—in cleanliness, warmth, ventilation, sunshine, food and quiet—better off than they ever were before in their lives. Why build a palace for these poor insane creatures, while their families and friends outside occupy the wretchedest habitations to be found in Massachusetts? Prevention is better than cure. If money is to be spent for the class of inhabitants from whom most of these come, why not spend it in removing from their habitations the generators of insanity—the filth, foul air, foul water, bad food, crowded, dirty, dark, unventilated rooms, which now drive the men to the drinking houses and the women to despair—and in letting in sunshine and pure air, and in executing the excellent laws that now exist, unregarded, which apply to tenements for the poor?

"But, if a new asylum must be built, let it not be at such enormous cost.

"The Board of Directors of Public Institutions have an opportunity of building an asylum which shall exhibit all the improvements that have recently been made for such institutions, and thus be a model, a blessing to Boston and to all parts of the country. To be valuable as a model, it must not be costly. It should be built in the simplest and most economical style. Everything should be done for the comfort of the inmates. Those who are perfectly harmless might be placed by themselves in little modest houses, in the quiet of a garden, surrounded by flowers and beautiful shrubbery, under the care of one or two gentle and patient women, thus giving occupation to excellent and experienced nurses and other persons fallen in fortune, who are now living an anxious life of labor and care, trying to support themselves by taking boarders. * * * *

"The building should be low-studded. With the same openings to receive fresh air—with the same openings to send out foul air, a room of given length and breadth will be twice as well ventilated, and warmed, if it be 8½ or 9 feet high, as it will 17 or 18 feet high; as pipes that will let out all the foul air from the low-studded room in an hour, will require two hours to take it from the higher room; and the air of the latter will thus be left always somewhat foul; and, in the high-studded room, the fresh warm air will immediately rise to the upper part of the room, and there remain, above the heads of the occupants. * * * *

"A modest, suitable building or buildings, might be easily erected for a third part of the lowest sum proposed; and be all the better and more ornamental for its simplicity. Whenever built and at whatever cost, it will have to be paid for by the tax-paying inhabitants of the city. * * * *

"If the contemplated palace should be built, it would not long want occupants. The news would speedily reach Ireland. Pictures of the building would be sent there. Families liable to insanity would be invited and aided to come to Boston, and the squalid, unhealthy habitations which would receive them would soon complete the work of developing the inherent insanity.

"I will only add that, if the hospital must be built, I see no insuperable objection to any part of Winthrop for its site, except the bare, bleak point which has been selected for it. G. B. E.

We make some extracts from the report, in the New York *Medical Record*, of a successful case of transfusion, by Joseph Buchser, M.D., of New York. The patient, Mrs. H., aged 24, had exhaustive and repeated hæmorrhage from various emunctories, and presented extensive extravasations.

"Early in the morning of the 15th of June, her husband informed me that she was in a dying condition. Her respiration was then 60. Pulse 140. Since the previous evening no nourishment remained in her stomach. Was delirious during the whole night, lay in an apathetic state, gave painfully short and confused answers.

"Already, on the 14th, I had spoken to her husband of transfusion, informing him of the danger of the operation, and of the slim hope. I repeated the proposition to-day, and it was immediately accepted by the husband.

"I applied sinapisms to the epigastrium. Ice and tinc. moschi., which I gave, again rejected. Pulverized moschus remained. Dr. Guleke, who had previously seen the patient, kindly declared his readiness to assist me.

"After a satisfactory trial of the transfusion syringe of Eulenburg-Landois, we proceeded to the operation. We bandaged her right upper arm, previously having done the same to her vigorous and healthy husband, aged 27. A graduated glass, ready to receive the blood, and syringe, were lying in water of 40° C. The median basilic vein was the most prominent. I made an incision of an inch in length, and dissected the skin till the vessel appeared, covered by its sheath. The cellular tissue of the vein was raised and cut, a soude introduced in the hollow, the cellular tissue in both directions separated, and the vein was free.

"An eared curved soude, provided with two silk threads, was pushed under the vein; both threads were separated at a distance of about 6‴. Thus by raising these threads every flux and reflux of blood was impossible; at the same time the influx of air after the opening of the vein was prevented.

"We then proceeded to the venesection of the husband. During a powerful flow of blood, a solution of carb. soda, $NaO + CO$, was added—2 grains to ʒij. aq.; as far as it united with the blood the same took a lively red color. Lifting the vein, a V-shaped incision was made with a small scissors. The large syringe of Eulenburg-Landois was rapidly filled, surrounded by a warm cloth, the canule affixed, the air expelled, and the point of the syringe introduced into the vein about 12‴. The transfusion of about two ounces was easily accomplished. At once a decided resistance was felt; immediate change of position of the canule proved of no avail. The syringe was withdrawn, the canule detached; coagulated blood was found in it. Syringe and canule were emptied and cleaned, about three ounces of fresh blood were received in the instrument, and above one ounce again was injected.

"The patient, who could not possibly be anæsthetized, underwent the operation with ease.

"The vein was on both sides underbound; the patient looked instantly refreshed, and said, 'I feel better.' She relished at once a glass of claret and water.

"In three quarters of an hour the operation was accomplished. Pulse immediately after the operation had fallen to 116; resp. 16. One hour later, pulse 108; resp. 18.

"During the afternoon the patient felt very hungry and thirsty; took light food and drank a pint bottle of claret. Evening.—Pulse 116; resp. 22; temp. 37·5 C.

* * * * * * * *

"Ten days after the operation, patient left her bed, walked her room several times, felt from day to day better and stronger. Pulse 84–94.

"July 1.—Patient received ferr. carbonat. alcohol, and drank daily two quart bottles of claret. Previous to her illness patient was never used to wine, and now stated that she could drink a quart at once without feeling any ill effect.

"The wound did not readily unite. Two days after the operation a thrombus formed itself in the vena basilica, which could be traced as a hard string three inches upward. Local applications of cold compresses were made; twelve days after the operation no trace of induration in the vein could be felt. Only ten to twelve days after the operation the wound began to turn reddish; until then the cellular tissue remained entirely colorless; a small, healthy and strong granulation was formed, and on the eighteenth day after the operation the wound was closed.

"July 7.—Patient enjoys a good appetite and takes moderate exercise. Four days ago, I was again called to the patient and found her suffering from a prolapsus recti. Reposition was made. Suppositories of tannin and opium were ordered; prolapsus returned several times. Above the sphincter ani intern. we found a circular mass, which was sensitive to the touch. Tepid injections of water had a soothing effect; and a discharge of matter, lasting two days, relieved the patient. * * * *

"The result was successful, and still only three ounces of non-defibrinated blood were injected, the globules of which were only partly saturated with oxygen, as indeed it cannot be otherwise in this method of operation, and yet the effect on the central organization of the nervous system was such that the patient awoke from her soporific state and only then returned to full consciousness; vomiting disappeared, and a continuous and voracious appetite followed. * * * *

"The reasons why this operation is so seldom attempted are several. According to our notion they are:—

"1. The supposed danger of the operation. 2. Expensive instruments.

"1. Dumas and Prevost, Brown-Séquard and Panum proved that defibrinated blood acts as nourishing and as reviving as such containing the fibrine. The first degree of coagulation begins at once; even with all precautions, after ninety seconds; the latest after six minutes; generally after three minutes if much male blood is employed. Thus Padum positively recommends to operate with defibrinated blood, stating that if coagula are injected, emboli in the pulmonary arteries are formed, by which diminished flux of blood to the heart and medulla oblongata arises, resulting in immediate death. Panum's experiments were unknown to me before the operation.

"On the other hand, Martin, in Berlin, and others, transfused with non-defibrinated blood, and assert that a minimum of coagulated fibrine is harmless.

"The experiments of Panum are so profound that they are convincing at once; besides the blood can be defibrinated and filtered in a time of six to eight minutes, and at least this time is wanted to make the vein free, so that the principal objection which is made against defibrination falls away.

"Should the defibrinated blood get cold it can again be made warm; besides there is not any danger if it is some degrees below the temperature of the body; and transfusion made with cold blood would only produce a short-lasting chill without any consequences.

"Therefore, if transfusion is made with defibrinated blood, the operation will be without danger—supposing that no air enter the lumen of the vein. The entering of the air becomes impossible if the operation is performed after the method of Dieffenbach, which we have adopted and described.

"2. Transfusion will never be generally exercised in practice as long as the syringe of Eulenburg-Landois costs eighty dollars. Its straight canule, however, is of no practical use, and if it were bent rectangularly the injection would be more easy.

"We think that every syringe containing four ounces, in good condition, and not receiving any air, of which we can be assured if we try it filled under water, can be employed for the operation. Every intelligent instrument maker should be able to furnish such a syringe, with silver canule, at a cost of from six to eight dollars."

ON THE CHOLAGOGUE ACTION OF MERCURY.—Whatever good effects may be obtained by using mercury, are still facts which no change of theory can alter. Modern researches only alter our interpretation of the facts, and not the facts themselves; and if mercury does not increase the amount of bile secreted by the liver, as has been hitherto supposed, but, in reality, diminishes the supply, it follows that we must look upon our results from a different point of view, and admit that our knowledge of the action of this drug, as of most others, is simply empirical.

The Edinburgh Committee appointed by the British Medical Association have published an elaborate report on the action of mercury as a cholagogue. The first part is purely historical, and gives an account of the difficulties which experimentalists have found in making accurate observations. The second part contains the researches of the Committee.

After several failures, biliary fistulæ were established in full-grown healthy dogs, and every precaution was taken to prevent any shock from injury to the nerve or escape of bile or blood into the peritoneal cavity. Drs. Rutherford and Gamgee, to whom the success of the experiments seems to have been in a great measure due, devised an apparatus for collecting the bile secreted during twenty-four hours by a dog. In the fistulous opening was placed a Scott's canula, at the external end of which was attached a sponge, so as to collect the bile when it flowed through the canula. The sponge was placed in a tin box, and the latter was secured in its place by a gutta-percha shield, which fitted to the dog's body. A preliminary investigation was made to determine how far dogs are subject to the action of mercury. * * * *

The Committee concluded from these experiments that mercury has the same action on a dog that it has on man. This is an important fact, and it seems to be warranted by the report. Much larger quantities are, no doubt, required to produce effects in a dog similar to those which a small dose exerts on man, but then the difference is one of degree and not of kind. And, further, it is easy to find out the commencement of salivation or of spongy gums in a man, while in dogs you have to continue the administration of the drug until more decided effects are manifested.

The Committee made experiments on nine dogs with pilula hydrargyri, calomel, and corrosive sublimate. In each case they found that whether given in small, large, or gradually increasing doses, mercury did not increase the biliary secretion; so long as neither purgation nor impairment of health was produced, it did not even influence the secretion of bile, but as soon as the dogs began to suffer in health the quantity was diminished. For a full account of the observations made and the careful mode in which they were worked out we must refer our readers to the report itself. * * * *

We have by degrees lost that faith in mercury which it was the privilege of our forefathers to possess; it has been shown that inflammation and fever can be cured without it; some even have ascribed many of the dire effects of syphilis to its use. Still there remained a belief with many that it had some influence on the hepatic secretion. Even this last hope seems vanishing, and we may soon come to the conclusion that its only use in doses short of salivating is to purge; for this purpose a more harmless drug may perhaps be substituted.

There is one advantage which comes from the scientific work of the present day. In upsetting old theories it paves the way for new ones; it does this, too, by more accurately recording facts, and so making the new views more nearly approximate to truth. It is better to have no theories at all than to cherish erroneous ones; it is better still that men should doubt, if in the end they are led from scepticism to belief.—*Medical Times and Gazette.*

Rank of Medical Officers in the Navy.—Rank in the line has properties which increase in value and importance as it rises in the scale. It determines for the possessor the locality of his sleeping berth on board ship, as well as of his seat at the mess-table and council-board or court; his succession in the order of his going from or returning to the ship; his seat in the boat that conveys him to and from the shore with others of his grade; whether he may have the exclusive use of a boat; the ceremonial of respect enacted when he goes or comes; what personal service may be extended to him; the hour at which his candle shall be extinguished at night; the degree of his power and discretion as well as the limits of his command; and last but not least, rank guides the department in its assignment of line officers to duty. Then, too, there are personal immunities and exemptions which are customarily accorded to certain degrees of rank, increasing with its increase.

Rank is also the index of precedence on occasions of ceremony, and in some measure determines social relations in the naval community. * * * *

The design of the Navy Department and of Congress to confer on medical and other staff officers a substantial rank, having the properties of rank, has been defeated by the contumacy of the line, manifested by all kinds of illogical pretexts and pettifogging subterfuges at different times. In corroboration of this assertion we refer to a correspondence between the late paymaster Sam Forrest and the late commodore Thos. ap Catesby Jones, at the time serving together on the coast of California. * * * *

By convening a board of line and staff officers to consider and report on all questions relative to rank in the navy, the Navy Department acknowledged that the staff officers are entitled to proper degrees of rank or position relatively to the line. As that board, which was adroitly constituted so as to secure a majority against the views entertained in common by the medical staff as well as others, was dissolved without agreement upon any plan, it remains for the Naval Committees of Congress to collect all the reliable data understandingly, and from them frame a law which shall meet the requirements of the case, and be just to all. It is time that line officers should cease to dictate to the national legislature the measures it shall or shall not adopt to rule the navy. The line officers on duty in the Navy Department have grown to be, in an undefined manner, a sort of auxiliary naval committee of Congress; and because they are deservedly renowned for naval prowess, it seems to be admitted that their logic and knowledge, acquired only through the influence of the imperative mood of the quarter-deck, must be of a character to qualify them to be statesmen of the highest order.

For our professional brethren in the military service, whether of the army or navy, we respectfully demand just consideration at the hands of Congress. The seamen and soldiers of the military establishment, when sick or wounded in the service of the nation, are entitled to the attention of medical men of the highest qualifications the country affords. But such attention cannot be obtained for them as long as medical officers are exposed to such humiliation and contumely as have been put upon them recently in the navy, as the case of Dr. Charles L. Green abundantly shows.—*N. Y. Medical Record*, Dec. 15, 1869.

A correspondent of the above journal of the same date, writes as follows:—

As to rank and pay, the medical corps of the navy has much to complain of, and a just claim upon the profession for the exercise of all its influence in its behalf. By creating new grades, and authorizing increased compensation, Congress has advanced the line, until the relative standing of line and staff is so disgracefully disproportionate as to have excited comment and ridicule among foreign nations. There are medical officers in our navy to-day, who served faithfully as such during nearly all the war, still receiving the niggardly salaries of Passed Assistants—$1,500 a year; while officers of the line, who ranked below them on original entry into the service, and who, in many cases, are a half score of years their juniors, now hold the rank of Lieutenant-Commanders, on salaries of $2,343 per year. Surgeons who entered the service twenty years ago, educated at their own expense, who have seen ten and twelve years of sea service, are still receiving as their highest pay $2,400, with no chance of promotion above the rank of Captain; while line officers, received into the Naval Academy at the same time, boys from fourteen to eighteen, to be educated at government expense, are enjoying equal rank, and higher salaries by four hundred dollars per annum, with the prospect of the honors and emoluments of Commodores, and the different grades of Admiral in riper years.

The reasons for this difference are to be found, I think, not in a lack of appreciation of the important services rendered by medical men, or in "that bitterness of hate which the line bears towards the staff;" but in the fact that the line of the navy constitutes a body of vast political influence. Every lad sent to the Naval Academy, is the son, nephew, or protégé of some Congressman, or of some man who has friends at court. His appointment is conferred as a public favor, and the same influence that gives him his position, avails to secure for him other privileges. With the medical corps it is not so. Political men and political favors are unknown to this department of the staff. Any young medical man, of the required age, however poor and obscure, may obtain permission to appear before the examining board. If the report is favorable, he receives a commission; if unfavorable, no influence will avail to give him one. Being, then, a far less numerous body than the line, and almost entirely destitute of political strength, the surgeons of the navy have been unable, thus far, though their efforts have been united and persistent, to get the attention of Congress long enough to demonstrate that they are poorer in rank and pay than any other corps of our military or naval service; poorer than the average of members of any county medical society in the country; so poor, that the government ought to be ashamed of the petty sum it is paying to men who have served the country faithfully and heroically through years of tedious blockade and storm, and pestilence and war.

From the *New York Medical Gazette* of the 11th we take the following reference to the action which the profession generally are called upon to take in this important matter:—

The College of Physicians and Surgeons of Philadelphia have issued a memorial in relation to medical rank in the Navy, which is to be sent to the various medical societies of Pennsylvania and other States, for the signatures of their officers. Action of this sort would probably have been taken by the American Medical Association, at its recent session, had not that body been misled by the singularly fallacious statements of Dr. Pinkney. Since then the Navy Department has inflicted additional humiliations upon the medical staff, and we are truly glad to see that the crowning outrage in the case of Dr. Green has at last aroused the attention of the profession to a question which should have been settled years ago. We sincerely trust that every medical society throughout the country will make this grievance its own, and that an unanimous protest may force Congress to do simple justice to those members of our profession whose claim to honorable consideration is weakened only by their misfortune in having entered their country's service.

Important if True!—That the Committee or Board on Naval Staff Rank, instead of making the report we copied a short time since, were unable to agree upon any plan, and adjourned *sine die*.

Threatened Death from Chloroform.—The *British Medical Journal*, of Sept. 11th, says:—Recently, at King's College Hospital, London, there was a very narrow escape from death by chloroform. The patient was a healthy man, aged 30, who was to undergo the operation of removal of a tumor from the front of the leg, by Mr. Henry Smith. As the inhalation proceeded, the patient began to struggle so violently that it required the assistance of several dressers to prevent him from throwing himself from the table. He, however, became insensible to pain; and Mr. Smith proceeded with the dissection, but was compelled to desist, in consequence of the violent movements of the patient. The chloroform was now entirely suspended; but, notwithstanding this, the man's face became suddenly livid, then changed to a deep purple color, respiration and pulse completely stopped, and death had apparently taken place. Mr. Smith at once thrust his finger to the top of the windpipe, got forward the tongue, and assistants commenced artificial respiration by the movements recommended by Dr. Silvester. The naked chest was vigorously flipped with a wet towel. For a brief period these measures seemed to produce no effect; but after a short time there was a slight improvement in the complexion, when the efforts were redoubled, and all were delighted to find the apparently dead man slowly respiring. In two or three minutes more, the man had so far recovered that Mr. Smith was able to complete the operation, although, of course, no chloroform was exhibited. In some remarks after the operation, Mr. Smith referred to the narrow escape of the patient, and said it illustrated the danger which will occasionally attend chloroform, however carefully given, more especially in those cases where its exhibition is followed by a great amount of struggling. It was necessary to be particularly careful with it when this occurred; he had seen other narrow escapes exactly under the same circumstances.—*Dental Register*.

A Mode of treating Tetanus.—Quite recently a patient who had become attacked by tetanus after compound comminuted fracture of the little, ring, and middle fingers, was treated by section of the chief nerves of the arm. Mr. Maunder cut across the median, radial, and ulnar nerves in the lower fourth of the upper arm instead of amputating.—*Medical Times and Gazette*.

DEATHS FROM CHLOROFORM.

Fatty Heart and Death from Chloroform.—At a meeting of the New York Pathological Society, Dr Lewis A. Sayre presented a specimen of abscess of the liver of the capacity of eight ounces, removed from a man who was supposed to have met his death in consequence of the administration of chloroform for an operation for hæmorrhoids. The patient was 37 years of age, and had been suffering from a variety of symptoms referable to intemperate habits. The physician to whom he appealed discovered the existence of piles and advised their removal. The anæsthetic was administered as a preliminary, but when everything was ready for the operation the patient suddenly died. The case became one for the coroner, and Dr. Finnell made the autopsy. The liver, in connection with the condition already described, was found to be far advanced in cirrhosis, the spleen was also the seat of abscesses of a multiple character, and the heart was exceedingly fatty, so much so that a few inhalations of the chloroform would in any event have been sufficient to have destroyed life.—*New York Medical Record*.

Are any of our readers aware of a case in which ether has caused death because the patient had a fatty heart? Are physicians in the habit of auscultating the heart for possible fatty degeneration before giving ether?

Medical Miscellany.

Dr. Schœppe, recently reprieved by Gov. Geary, is described as being a dignified and refined looking gentleman, with a slight touch of the German cast of face; stands about five feet ten inches high, and his body is well proportioned. His face is full, and, contrary to the usual result of several months' confinement, is devoid of the prison pallor. Judging by the bloom on his cheeks, one is led to believe that he has just been incarcerated. His hair and mustache are very dark, and both are kept in a nicely trimmed condition; his eye is clear and full of expression, and while in conversation speaks almost as plainly as the words which roll from his mouth; he is short-sighted, and the only objectionable feature in his physiognomy is that he is occasionally given to squinting. He has a large, muscular frame, which is to be attributed to the athlethic exercises which he cultivated in early years. He is what is termed a handsome-looking man, and is one who would be likely to attract attention. Schœppe asserts that justice has not been accorded him; that prejudice was the cause of his arrest and conviction. He hopes to obtain a new trial and an acquittal. —*Boston Post.*

He [Dr. Beebe] believed physicians should draw a wide contrast between homœopathic and allopathic surgery. There is a vast difference in the result. The mortality is very much less, and we can undertake operations with hopes of success, that they dare not undertake. So sure is he of success, with our remedies to aid him, that he feels able to undertake almost any operation. Believed that before another twelvemonth he would extirpate a lung. Has a case now; were it the right lung that was diseased instead of the left, he would excise it.—*Report Illinois Homœopathic Medical Association, Chicago, Nov. 9, 1869.*

Snake Bite Cured by the Application of a Coal of Fire.—Dr. Perkins writes to the *Galveston Medical Journal*:— * * * * A young man, 18 years of age, was bitten by a very large rattlesnake (five feet long) on the arm, above the elbow. A coal of fire was applied a short time after he was bitten. I saw him two hours after the accident, when he appeared very much prostrated and was vomiting every few minutes—pulse very small and frequent, complaining constantly of the burn, which was pretty severe. I gave him freely of diluted alcohol. His recovery was rapid and the swelling in the arm slight.

The question now is, did the fire do any good? I think it did; not only by destroying the virus, to a considerable extent, but also by producing a local incapacity in the veins and absorbent vessels to perform their functions. I think, in all probability, he would have died before the alcohol was given, if the fire had not been applied.—*Medical and Surgical Reporter.*

In the Vienna Lyir[illegible] Hospital, for the year 1867, there were 8[illegible]nfinements in the different departme[illegible] total mortality among the women was 94, [illegible] per cent.—*Medical Record.*

Publishers' Notice.—In conformity with the plan suggested in the Journal some months since, the 4th volume closes with the present number—at the end of the calendar year instead of at the close of January as formerly. The number of pages lost by this omission of a month's time has been more than made up during the year by frequent additional ones to the weekly issues. In making up the numbers for binding, it will be necessary to notice that some of them are issued as double numbers, which was done that the full number of 26 might show that the volume is completed. The Title-page and Index to Vol. IV. will be sent to subscribers with the next issue—No. 1, Vol. V.

As usual at this season, subscribers, who have not already paid, will receive their bills in one of the numbers of the Journal. A receipt for remittances by mail is always intended to be sent in the next number after receiving them; should such receipt not reach any subscriber at the proper time after his remittance, notice should be given to the publishers.

Erratum.—Mrs. Partington says Ike tells her there is a misprint on page 382, second column, line first, of our last issue. Instead of "children are very perceptible to the influence of opium," it should be *susceptible*, &c.

To Correspondents.—Communications accepted:—Opium Eating cured by Belladonna Poisoning—Undescribed Vertebral Processes.

Books and Pamphlets Received.—Nocturnal Enuresis and Incontinence of Urine. By Frederick G. Snelling, M.D., of New York. Re-printed from the New York Medical Gazette. Pp. 18.—Last Illness of Dr. Alden March. A Criticism on the Management of his Case. By Charles A. Robinson, A.M., M.D., Albany. Pp. 28.—Lecture Introductory to the Course on Materia Medica and Hygiene, delivered before the Medical Class of the University of Buffalo, Nov. 28, 1869. By Charles A. Lee, M.D.

Deaths in eighteen Cities and Towns of Massachusetts for the week ending Dec. 25, 1869.

Cities and towns.	Number of deaths in each place.	Prevalent Diseases. Consumption.	Pneumonia.	Diph. & Croup.	Scarlet Fever.
Boston	106	19	8	1	4
Charlestown	8	0	1	0	1
Worcester	18	3	1	1	0
Lowell	16	1	2	2	1
Milford	4	1	1	0	0
Chelsea	7	2	0	3	0
Cambridge	9	0	1	1	1
Salem	9	4	2	1	0
Lawrence	6	0	0	1	0
New Bedford	11	3	0	0	0
Springfield	7	2	2	1	0
Lynn	3	2	0	0	0
Pittsfield	4	0	0	0	0
Fitchburg	5	1	1	0	1
Taunton	6	1	0	0	0
Newburyport	3	0	0	0	0
Fall River	12	2	3	0	0
Haverhill	5	1	1	0	0
	239	42	23	11	8

George Derby, M.D.,
Secretary of State Board of Health.

Deaths in Boston for the week ending December 25, 106. Males, 49—Females, 57.—Abscess, 1—accident, 2—apoplexy, 3—congestion of the brain, 3—disease of the brain, 3—bronchitis, 3—cancer, 5—consumption, 19—convulsions, 2—cyanosis, 3—debility, 6—diarrhœa, 3—diphtheria, 1—dropsy, 2—dropsy of the brain, 2—epilepsy, 1—scarlet fever, 4—typhoid fever, 2—gangrene, 1—disease of the heart, 6—disease of the hip, 1—intemperance, 1—jaundice, 1—disease of the kidneys, 2—disease of the liver, 2—congestion of the lungs, 2—inflammation of the lungs, 8—marasmus, 2—old age, 3—paralysis, 2—puerperal disease, 1—unknown, 9.

Under 5 years of age, 37—between 5 and 20 years, 6—between 20 and 40 years, 23—between 40 and 60 years, 17—above 60 years, 22. Born in the United States, 73—Ireland, 24—other places, 9.